## Amendments to the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

1) (Currently Amended) A method of Fourier Transform spectrometry, comprising the steps of:

a) providing a first fixed electromagnetic energy source, ~~and~~ a second fixed electromagnetic energy source, and a detector, ~~said electromagnetic energy sources having a phase relationship~~, wherein said second fixed electromagnetic energy source is virtual and said electromagnetic energy sources have a phase relationship;

b) interfering an electromagnetic energy output from said first fixed electromagnetic energy source and said second fixed electromagnetic energy ~~sources~~ source, thereby producing an interference pattern in the spatial domain between said first and second fixed electromagnetic energy sources and said detector;

c) impinging said interference pattern onto said detector, wherein said impinging occurs without manipulating said interference pattern by additional optical elements;

d) measuring said interference pattern using said detector; and

e) transforming said interference pattern into a spectral content.

2) (Currently Amended) The method as recited in claim 1, wherein said ~~virtual~~ second fixed electromagnetic energy source is provided by a reflective surface.

3) (Original) The method as recited in claim 2, wherein said reflective surface is planar or

cylindrical.

4) (Currently Amended) The method as recited in claim 1, wherein said first fixed electromagnetic energy source and said ~~virtual~~ second fixed electromagnetic energy source are supplied by ~~a light~~ an electromagnetic energy supply source optically demodulated by:

a) receiving ~~a light~~ an electromagnetic energy output from said supply source into an optical fiber;

b) altering said ~~light~~ electromagnetic energy output; and

c) using said altered ~~light~~ output as said first fixed electromagnetic energy source and said virtual second fixed ~~light~~ electromagnetic energy source.

5) (Currently Amended) The method as recited in claim 4, wherein altering said ~~light~~ electromagnetic energy output is splitting said ~~light~~ electromagnetic energy output.

6) (Currently Amended) The method as recited in claim 4, wherein altering said ~~light~~ electromagnetic energy output is sending said ~~light~~ electromagnetic energy output through a Bragg grating.

7) (Currently Amended) The method as recited in claim 1, further providing said first fixed electromagnetic energy sources and said ~~virtual~~ second fixed electromagnetic energy source ~~as a light source~~, transforming the interference pattern with an optoelectronic

transducer, and optically measuring the interference pattern of a test material by placing the material between said light source and the optoelectronic transducer.

8) (Cancelled)

9) (Currently Amended) An apparatus of a non-scanning interferometer for spectral analysis, comprising:

a) a first fixed ~~real radiant~~ electromagnetic energy point source and at least a second fixed electromagnetic energy point ~~a fixed virtual radiant~~ source separated by a known distance, ~~said fixed real radiant source and said fixed virtual radiant source having a phase relationship that produces an interference pattern~~ wherein said known distance is fixed during a measurement;

b) at least one reflective surface, wherein said reflective surface is located in a proximal plane generally parallel to an electromagnetic output from said first and said additional fixed electromagnetic energy point sources;

~~b)~~ c) a non-scanning detector ~~that spatially measures the interference pattern~~ located in a distal plane generally perpendicular to said proximal plane, wherein an interference pattern impinges detector without being manipulated by additional optical elements;

~~c)~~ d) a non-scanning converter that converts the interference pattern into a spectral content.

10) (Original) The apparatus as recited in claim 9, wherein said non-scanning detector is

linear or planar.

11) (Cancelled)

12) (Currently Amended) The apparatus as recited in claim ~~11~~ 9, wherein said reflective surface is planar or cylindrical.

13) (Original) The apparatus as recited in claim 9, wherein said fixed sources and said non-scanning detector define a space or volume there between selected from the group consisting of vacuum, gas, liquid, solid, or a combination thereof.

14) (Currently Amended) The apparatus as recited in claim 9, wherein said ~~fixed real radiant source and said fixed virtual radiant source~~ first fixed electromagnetic energy source and said second electromagnetic energy source receives light from an optical demodulation apparatus, comprising:

a) an optical fiber for receiving and transmitting ~~light~~ electromagnetic energy.

b) ~~a light~~ an electromagnetic energy alteration unit that receives the ~~light~~ electromagnetic energy from the optical fiber and passes altered ~~light~~ electromagnetic energy into the pair of ~~radiant light~~ fixed electromagnetic energy sources.

15) (Currently Amended) The apparatus as recited in claim 14, wherein the ~~light~~ electromagnetic energy alteration unit is a splitter.

16) (Currently Amended) The apparatus as recited in claim 14, wherein the ~~light~~ electromagnetic energy alteration unit is a Bragg grating.

17) (Cancelled)

18) (New) A method of Fourier Transform Spectrometry comprising the steps of:

a) providing a first fixed electromagnetic energy point source, at least one additional fixed electromagnetic energy point source, an electromagnetic energy output from said fixed electromagnetic energy point sources, and at least one reflective surface located in a proximal plane, wherein a sample to be analyzed is said reflective surface;

b) reflecting at least a portion of said electromagnetic energy output from at least one of said fixed electromagnetic energy point sources off of said reflective surfaces;

c) interfering electromagnetic energy output from said fixed electromagnetic energy point sources with said portion of said electromagnetic energy output reflected off of said reflective surfaces, thereby resulting in an interference pattern;

d) further providing a detector located in a distal plane generally perpendicular to said reflective surfaces, wherein said interference pattern directly

impinges said detector in said distal plane;

e) measuring said interference pattern using said detector; and

f) transforming said interference pattern into a spectral content.

19) (New) The method as recited in claim 18, wherein said additional electromagnetic energy point source is virtual, provided by said reflective surface.

20) (New) The method as recited in claim 18, wherein at least one of said additional electromagnetic energy point sources is real and remainder of said additional electromagnetic energy point sources are virtual, provided by said reflective surface.

21) (New) The method as recited in claim 18, wherein said first fixed electromagnetic energy point source and said additional electromagnetic energy point sources comprise at least one wavelength of electromagnetic energy.

22) (New) The method as recited in claim 18, wherein at least one of said first fixed electromagnetic energy point source and said additional electromagnetic energy point sources is provided by a fiber optic.

23) (New) The method as recited in claim 18, wherein said sample to be analyzed comprises a time-dependent phenomenon occurring on said sample.

24) (New) The method as recited in claim 18, wherein a space between said first fixed electromagnetic energy point source, said reflective surface, and said detector is defined by said sample.

25) (New) The method as recited in claims 23 or 24, wherein said measuring and said transforming are in real-time.

26) (New) The method as recited in claim 1 further comprising the step of defining said spatial domain with a test material of interest.

Amendments to the Drawings

The attached sheets of drawings include changes to Figs. 1d, 1e, 1f, and 1g. These sheets replace the original sheets including said figures. In each figure, a typographical error has been corrected, wherein the label for the "proximal plane" has been changed from "P2" to "P1." The "distal plane," labeled "P2" has not been modified and is accurate.